4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2022-0674; Project Identifier AD-2021-00373-T]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to supersede Airworthiness Directive (AD) 2020-24-04, which applies to all The Boeing Company Model 787-8, 787-9, and 787-10 airplanes. AD 2020-24-04 requires revising the existing airplane flight manual (AFM) to incorporate procedures for an approach with a localizer-based navigation aid, monitoring localizer raw data, calling out any significant deviations, and performing an immediate go around under certain conditions. Since the FAA issued AD 2020-24-04, the manufacturer has developed a modification to address the previously identified unsafe condition. The FAA has also identified a separate unsafe condition where misleading flight director (FD) guidance can be presented to the flightcrew under certain conditions. This proposed AD would continue to require the actions specified in AD 2020-24-04 and would require installing applicable software updates to the flight control module (FCM). Using updated software would terminate the retained AFM requirement in this AD. The FAA is proposing this AD to address the unsafe conditions on these products.

DATES: The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

• Federal eRulemaking Portal: Go to https://www.regulations.gov. Follow the instructions for submitting comments.

• Fax: 202-493-2251.

• Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

• Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminster Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet https://www.myboeingfleet.com. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available at https://www.regulations.gov by searching for and locating Docket No. FAA-2022-0674.

Examining the AD Docket

You may examine the AD docket at https://www.regulations.gov by searching for and locating Docket No. FAA-2022-0674; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, any comments received, and other information. The street address for Docket Operations is listed above.

FOR FURTHER INFORMATION CONTACT: Hassan Ibrahim, Aerospace Engineer, Systems and Equipment Section, FAA, Seattle ACO Branch, 2200 South

216th St., Des Moines, WA 98198; phone and fax: 206-231-3653; email: Hassan.M.Ibrahim@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under ADDRESSES. Include "Docket No. FAA-2022-0674; Project Identifier AD-2021-00373-T" at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend the proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to https://www.regulations.gov, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this proposed AD.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as "PROPIN." The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Hassan

Ibrahim, Aerospace Engineer, Systems and Equipment Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3653; email: Hassan.M.Ibrahim@faa.gov. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

The FAA issued AD 2020-24-04, Amendment 39-21334 (85 FR 77991, December 3, 2020; corrected December 14, 2020 (85 FR 80589)) (AD 2020-24-04); for all The Boeing Company Model 787-8, 787-9, and 787-10 airplanes. AD 2020-24-04 was prompted by reports that the autopilot flight director system (AFDS) failed to transition to the instrument landing system localizer (LOC) beam after the consistent localizer capture (CLC) function in the FCMs initiated a transition to capture LOC during approach. AD 2020-24-04 requires revising the existing AFM to incorporate procedures for conducting an approach with a localizer-based navigation aid, monitoring localizer raw data, calling out any significant deviations, and performing an immediate go around if the airplane has not intercepted the final approach course as shown by the localizer deviation. The agency issued AD 2020-24-04 to address the AFDS failing to transition, which could result in localizer overshoot leading to glideslope descent on the wrong heading. Combined with a lack of flight deck effects for a consistent localizer capture mode failure, this condition could result in controlled flight into terrain.

Actions Since AD 2020-24-04 Was Issued

The preamble to AD 2020-24-04 explains that the FAA considers the requirements “interim action” and that the manufacturer is developing a modification to address the unsafe condition. That AD explains that the FAA might consider further rulemaking if a modification is developed, approved, and available. Since the FAA

issued AD 2020-24-04, the manufacturer has developed software updates for the FCM, and the FAA has determined that further rulemaking is indeed necessary; this proposed AD follows from that determination.

Further, the FAA has since identified a separate unsafe condition where in certain scenarios, misleading FD guidance can be presented to the flightcrew during approach. Operators may experience misleading FD guidance after disengaging the autopilot due to a "mode fail" caused by glideslope beam anomaly during instrument landing system (ILS) approach and may lead to controlled flight into terrain (CFIT) or a runway overrun.

New software developed by Boeing addresses the autopilot logic for the transition from CLC to LOC during approach. Also, during ILS signal fluctuations, changes in the new software reduce potential deviation from desired glidepath, and eliminates the potential for misleading FD guidance subsequent to autopilot disconnect.

FAA's Determination

The FAA is issuing this NPRM after determining that the unsafe conditions described previously are likely to exist or develop on other products of the same type design.

Related Service Information under 1 CFR Part 51

The FAA reviewed Boeing Alert Requirements Bulletin B787-81205-SB270053-00 RB, Issue 002, dated May 6, 2021. This service information specifies procedures for updating flight control electronics (FCE) software to install common block point (CBP) 5.1 operational program software (OPS) having part number HNP5A-AL01-5041 in the FCM, and doing a software configuration check.

Boeing Alert Requirements Bulletin B787-81205-SB270053-00 RB, Issue 002, dated May 6, 2021, specifies prior or concurrent accomplishment of Boeing Alert Service Bulletin B787-81205-SB270044-00, Issue 003, dated July 7, 2020; or Boeing

Service Bulletin B787-81205-SB270046-00, Issue 002, dated October 24, 2019; as applicable, which specify procedures for installing FCE software update CBP 5.0.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Proposed AD Requirements in this NPRM

This proposed AD would retain all requirements of AD 2020-24-04. This proposed AD would also require accomplishing the actions specified in the service information described previously. For information on the procedures and compliance times, see this service information at https://www.regulations.gov by searching for and locating Docket No. FAA-2022-0674**.**

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 214 airplanes of U.S. registry. The FAA estimates the following costs to comply with this proposed AD:

Estimated costs*

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Revising the AFM (retained actions from AD 2020-24-04)	1 work-hour X $85 per hour = $85	$0	$85	$18,190
Updating the software	Up to 4 work-hours X $85 per hour = $340	*	$340*	$72,670*

*The table does not include the parts cost for the software.

The FAA has determined that updating the software requires installing up to 8 software loads, at $300 per load, per operator. For the parts cost, the FAA has determined that a per-operator estimate is more accurate than a per-airplane estimate. Therefore, the FAA estimates the total cost for software to be $2,400 per operator.

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some of the costs of this proposed AD may be covered under warranty, thereby reducing the cost impact on affected operators.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

The FAA has determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that the proposed regulation:

(1) Is not a "significant regulatory action" under Executive Order 12866,

(2) Would not affect intrastate aviation in Alaska, and

(3) Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by:

a. Removing Airworthiness Directive (AD) 2020-24-04, Amendment 39-21334 (85 FR 77991, December 3, 2020; corrected December 14, 2020 (85 FR 80589)); and

b. Adding the following new AD:

The Boeing Company: Docket No. FAA-2022-0674; Project Identifier AD-2021-00373-T.

(a) Comments Due Date

The FAA must receive comments on this airworthiness directive (AD) action by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD replaces AD 2020-24-04, Amendment 39-21334 (85 FR 77991, December 3, 2020; corrected December 14, 2020 (85 FR 80589)) (AD 2020-24-04).

(c) Applicability

This AD applies to all The Boeing Company Model 787-8, 787-9, and 787-10 airplanes, certificated in any category.

(d) Subject

Air Transport Association (ATA) of America Code 22, Auto flight.

(e) Unsafe Condition

This AD was prompted by reports indicating that the autopilot flight director system (AFDS) failed to transition to the instrument landing system localizer (LOC) beam after the consistent localizer capture function in the flight control modules initiated a transition to capture LOC during approach. The FAA is issuing this AD to address the AFDS failing to transition, which could result in localizer overshoot leading to glideslope descent on the wrong heading. Combined with a lack of flight deck effects for a consistent localizer capture mode failure, this condition could result in a controlled flight into terrain (CFIT) or a runway overrun. This AD was further prompted by reports of misleading flight director guidance that in certain scenarios can be presented to the flightcrew during approach and could lead to CFIT or a runway overrun.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Retained Revision of the Existing Airplane Flight Manual (AFM), With New Terminating Action

This paragraph restates the requirements of paragraph (g) of AD 2020-24-04, with new terminating action. Within 14 days after December 18, 2020 (the effective date of AD 2020-24-04), revise the Operating Procedures chapter of the existing AFM and applicable corresponding operational procedures to incorporate the procedures specified in figure 1 to paragraph (g) of this AD. Revising the existing AFM to include the changes specified in paragraph (g) of this AD may be done by inserting a copy of figure 1 to paragraph (g) of this AD into the existing AFM. Installing the software required by paragraph (h) of this AD terminates the requirement for revising the existing AFM in this paragraph.

Figure 1 to paragraph (g) – *Operating Instructions*

(Required by AD 2020-24-04)
Autopilot Flight Director System – Operating Instructions:

When conducting an approach with a localizer-based navigation aid, monitor localizer raw data and call out any significant deviations. If AFDS performance is not satisfactory, the flight crew must intervene. Perform an immediate go-around if the airplane has not intercepted the final approach course as shown by the localizer deviation.

(h) New Required Actions

For airplanes identified in paragraph A, "Effectivity," of Boeing Alert Requirements Bulletin B787-81205-SB270053-00 RB, Issue 002, dated May 6, 2021: Except as specified by paragraph (i) of this AD, at the applicable times specified in the "Compliance" paragraph of Boeing Alert Requirements Bulletin B787-81205-SB270053-00 RB, Issue 002, dated May 6, 2021, do all applicable actions identified in, and in accordance with, the Accomplishment Instructions of Boeing Alert Requirements Bulletin B787-81205-SB270053-00 RB, Issue 002, dated May 6, 2021.

Note 1 to paragraph (h): Guidance for accomplishing the actions required by paragraph (h) of this AD can be found in Boeing Alert Service Bulletin B787-81205-SB270053-00, Issue 002, dated May 6, 2021, which is referred to in Boeing Alert Requirements Bulletin B787-81205-SB270053-00 RB, Issue 002, dated May 6, 2021.

(i) Concurrent Actions

For airplanes identified as Group 1, Configuration 1, and as Group 2, Configuration 1, in paragraph A, "Effectivity," of Boeing Alert Requirements Bulletin B787-81205-SB270053-00 RB, Issue 002, dated May 6, 2021: Prior to or concurrently with accomplishing the actions required by paragraph (h) of this AD, do all applicable actions identified as "RC" (required for compliance) in, and in accordance with, the applicable service information identified in paragraphs (i)(1) and (2) of this AD.

(1) Boeing Alert Service Bulletin B787-81205-SB270044-00, Issue 003, dated July 7, 2020.

(2) Boeing Service Bulletin B787-81205-SB270046-00, Issue 002, dated October 24, 2019.

(j) Exception to Service Information Specifications

Where the Compliance Time columns of the tables in the "Compliance" paragraph of Boeing Alert Requirements Bulletin B787-81205-SB270053-00 RB, Issue 002, dated May 6, 2021, use the phrase "the Issue 001 date of Requirements Bulletin B787-81205-SB270053-00 RB," this AD requires using "the effective date of this AD."

(k) Terminating Action for AFM Revision

Installation of the software update specified in the Accomplishment Instructions of Boeing Alert Requirements Bulletin B787-81205-SB270053-00 RB, Issue 002, dated May 6, 2021, terminates the AFM revision required by paragraph (g) of this AD, and the AFM revision may be removed, provided that this software update has been installed on all affected airplanes in an operator's fleet.

(l) Credit for Previous Actions

(1) This paragraph provides credit for the actions specified in paragraph (h) of this AD, if those actions were performed before the effective date of this AD using Boeing Alert Requirements Bulletin B787-81205-SB270053-00 RB, Issue 001, dated February 19, 2021.

(2) This paragraph provides credit for the actions specified in paragraph (i)(1) of this AD, if those actions were performed before the effective date of this AD using Boeing Alert Service Bulletin B787-81205-SB270044-00, Issue 001, dated December 18, 2018; or Boeing Alert Service Bulletin B787-81205-SB270044-00, Issue 002, dated November 20, 2019.

(3) This paragraph provides credit for the actions specified in paragraph (i)(2) of this AD, if those actions were performed before the effective date of this AD using Boeing Service Bulletin B787-81205-SB270046-00, Issue 001, dated November 30, 2018.

(m) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Seattle ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (n) of this AD. Information may be emailed to: 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by The Boeing Company Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO Branch, FAA, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(4) AMOCs approved for AD 2020-24-04 are approved as AMOCs for the corresponding provisions of paragraph (g) of this AD.

(5) Except as specified by paragraph (j) of this AD: For service information that contains steps that are labeled as Required for Compliance (RC), the provisions of paragraphs (m)(5)(i) and (ii) of this AD apply.

(i) The steps labeled as RC, including substeps under an RC step and any figures identified in an RC step, must be done to comply with the AD. If a step or substep is labeled "RC Exempt," then the RC requirement is removed from that step or substep. An AMOC is required for any deviations to RC steps, including substeps and identified figures.

(ii) Steps not labeled as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining approval of an AMOC, provided the RC steps, including substeps and identified figures, can still be done as specified, and the airplane can be put back in an airworthy condition

(n) Related Information

(1) For more information about this AD, contact Hassan Ibrahim, Aerospace Engineer, Systems and Equipment Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3653; email: Hassan.M.Ibrahim@faa.gov.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminster Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet https://www.myboeingfleet.com. You may view this referenced service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

Issued on June 6, 2022.

Gaetano A. Sciortino, Deputy Director for Strategic Initiatives,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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